

Math 0120 Homework_01 is due : 08/29/2012 at 01:43pm EDT.

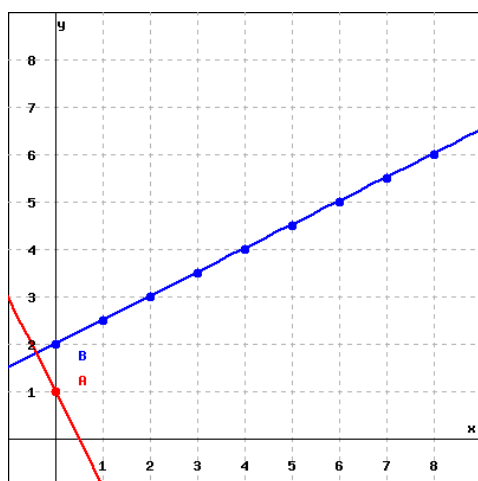
Reference: Berresford, Sections 1.1, 1.2

1. (1 pt)

Find an equation for each of the lines in the figure.

Line A (in red) has equation $y = \underline{\hspace{2cm}}$

Line B (in blue) has equation $y = \underline{\hspace{2cm}}$



(Click on graph to enlarge)

2. (1 pt) Write the linear equation $100x + 50y = 450$ in slope-intercept form. Enter your answer as an equation in slope-intercept form.

The slope is $m = \underline{\hspace{2cm}}$

The y -intercept is $b = \underline{\hspace{2cm}}$

3. (1 pt)

Without a calculator, match each equation with its graph A-G.

$y = x - 2$

$-3x + 2 = y$

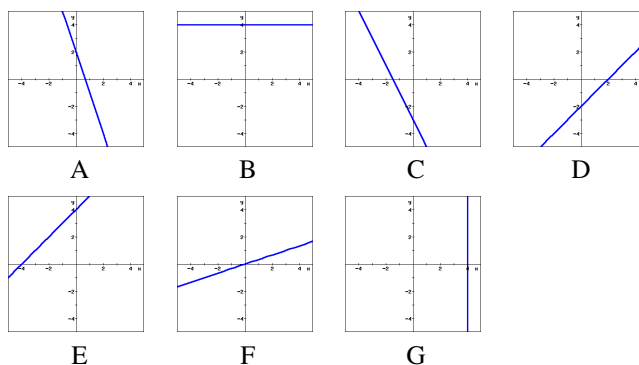
$4 = y$

$y = -2x - 3$

$y = x + 4$

$y = \frac{x}{3}$

$4 = x$



(Click on a graph to enlarge it)

4. (1 pt) Find the equation of the line that passes through the (x,y) points $(-4,5)$ and $(1,6)$.

$y = \underline{\hspace{2cm}}$

5. (1 pt) The monthly charge for a waste collection service is 1630 dollars for 100 kg of waste and 2430 dollars for 150 kg of waste.

(a) Find a linear model for the cost, C , of waste collection as a function of the number of kilograms, w .

$C = \underline{\hspace{2cm}}$

(b) What is the slope of the line found in part (a)?

Slope = $\underline{\hspace{2cm}}$

Think about the interpretation of the slope: are the units of the slope

- A. dollars
- B. kilograms
- C. kilograms per dollar
- D. dollars per kilogram

(c) What is the value of the vertical intercept of the line found in part (a)?

Value = $\underline{\hspace{2cm}}$

Think about the interpretation of the intercept: are the units of the intercept

- A. kilograms per dollar
- B. dollars per kilogram
- C. kilograms
- D. dollars

6. (1 pt) The expression $(3a^5b^3c^2)^2(2a^5b^2c^2)^3$ equals $na^rb^sc^t$

where n , the leading coefficient, is: _____

and r , the exponent of a , is: _____

and s , the exponent of b , is: _____

and finally t , the exponent of c , is: _____

7. (1 pt) Enter numerical values for the following **powers**. I recommend you don't use a calculator, to make sure you understand the concepts involved. Your answer needs to be a natural number, the system will not accept an arithmetic expression.

$$9^{\frac{3}{2}} = \underline{\hspace{2cm}}$$

$$8^{\frac{5}{3}} = \underline{\hspace{2cm}}$$

$$27^{\frac{4}{3}} = \underline{\hspace{2cm}}$$

8. (1 pt) Enter numerical values for the following **powers**.

$$(5^2)^{\frac{3}{2}} = \underline{\hspace{2cm}}$$

$$(2^3)^{\frac{5}{3}} = \underline{\hspace{2cm}}$$

$$(3^3)^{\frac{4}{3}} = \underline{\hspace{2cm}}$$

Hint: You take a power to a power by multiplying the exponents.

9. (1 pt) Match the radical expressions below with the letters labeling their equivalent exponential expressions.

___1. $\frac{1}{\sqrt{17}}$

___2. $\sqrt[4]{a^3}$

___3. $\sqrt[3]{a^4}$

___4. $\sqrt[4]{17^3}$

___5. $\sqrt[3]{17^2}$

A. $a^{4/3}$

B. $a^{3/4}$

C. $17^{2/3}$

D. $17^{3/4}$

E. $17^{-1/2}$

10. (1 pt) Evaluate the expression

$$\frac{\sqrt{180}}{\sqrt{5}}$$

Your answer is _____

11. (1 pt) The expression

$$\left(\frac{3a^{-4}}{3b^{-1/2}}\right)^{-1}$$

equals na^r/b^t where

n , the coefficient, is: _____

r , the exponent of a , is: _____

t , the exponent of b , is: _____

12. (1 pt) The expression

$$\sqrt[6]{a^5b^2}$$

equals a^rb^s where

r , the exponent of a , is: _____

s , the exponent of b , is: _____